

WHAT IS CLAIMED IS:

1. A fluid treatment and media management device employing a non-bonded media, comprising:

5 a media column defined by a spaced apart members adapted for containing the non-bonded media therebetween, said members arranged so that an influent flows through the members and the non-bonded media;

10 a first said member adapted for allowing the influent to flow therethrough and then through the non-bonded media to produce an effluent, and a second said member adapted for allowing the effluent to flow therethrough; and

an outlet of said non-bonded media column adapted for allowing the non-bonded media to be removed from said non-bonded media column without disassembly of the fluid treatment and media management device.

2. The fluid treatment and media management device of claim 1, wherein said non-bonded media column is annular shaped, and each said member has perforations formed therein, and a mesh screen associated with each said member, each said mesh screen adapted for containing the non-bonded media.

3. The fluid treatment and media management device of claim 1, further including at least a first end cap adapted for closing an end of said media column, said first end cap including an opening therethrough for passage of said non-bonded media.

4. The fluid treatment and media management device of claim 3, wherein said first end cap defines a bottom end cap.

5. The fluid treatment and media management device of claim 3, further including a valve for controlling an open and closed state of the opening in the end cap.

6. The fluid treatment and media management device of claim 3, further including a

second end cap adapted for closing another end of said media column.

7. The fluid treatment and media management device of claim 6, wherein said end caps are substantially identical in structure.

8. The fluid treatment and media management device of claim 6, wherein said end caps are formed of a moldable material.

9. The fluid treatment and media management device of claim 6, wherein at least one said first and second end cap includes a port for carrying the influent to said first member.

10. The fluid treatment and media management device of claim 9, wherein at least one said first and second end cap includes a port for carrying the effluent from said second member.

11. The fluid treatment and media management device of claim 3, wherein said end cap includes a frustoconical portion, and said opening is formed in said frustoconical portion.

12. The fluid treatment and media management device of claim 3, wherein said first end cap further includes a first port carrying influent to said first member, and a second port carrying fluid from said second member.

13. The fluid treatment and media management device of claim 12, further including a second end cap constructed substantially identical to said first end cap.

14. The fluid treatment and media management device of claim 12, wherein said first port comprises a bore formed axially into said first end cap, and further including an annular recess formed in said first end cap in communication with said bore.

15. A fluid treatment and media management device employing a particulate treatment media, comprising:

an inner and outer perforated cylinder, said inner perforated cylinder having a central core, said inner perforated cylinder being concentric with said outer perforated cylinder, a space between said inner and outer perforated cylinders adapted for containing the non-bonded media, said space defining a media chamber;

5 a case encircling said first and second perforated cylinders, said case spaced apart from said second perforated cylinder to provide an annular area;

10 a first end cap and a second end cap, said end caps engaging opposite ends of said case to provide an enclosed housing around said inner and outer perforated cylinders, said end caps engaging opposite ends of said inner and outer perforated cylinders to provide support thereto, at least one said end cap having an inlet port for carrying an influent to said annular area, at least one said end cap having an outlet port for carrying an effluent from the central core of said inner perforated cylinder.

16. The fluid treatment and media management device of claim 15, wherein at least one said end cap includes a media port coupled to said media chamber for allowing passage of the non-bonded media through said port external to said fluid treatment and media management device.

17. The fluid treatment and media management device of claim 15, wherein said first and second end caps have substantially identical construction.

18. The fluid treatment and media management device of claim 15, wherein said end caps each have a central port coupled to the central core of said inner perforated cylinder, and each end cap has a port coupled to the annular area.

19. The fluid treatment and media management device of claim 18, wherein each said end cap has a media port coupled to the media chamber for allowing passage of the non-bonded media therethrough external to said fluid treatment and media management device.

20. The fluid treatment and media management device of claim 15, wherein said inner and outer perforated cylinders have perforations substantially along an entire length thereof.

21. The fluid treatment and media management device of claim 15, further including a plug in said inner perforated cylinder to block flow of fluid through the central core thereof.

22. A method of treating a fluid with a non-bonded media, comprising the steps of: passing the fluid through a fluid treatment and media management device and through the non-bonded media;

once the non-bonded media is ineffective to treat the fluid, removing the non-bonded media from the fluid treatment and media management device without disassembly thereof; and

said step of removing the non-bonded media including transferring the non-bonded media out of the fluid treatment and media management device through a media access channel.

23. The method of claim 22, further including making the non-bonded media into a slurry and then transferring the non-bonded media out of the fluid treatment and media management device.

24. The method of claim 22, further including regenerating the non-bonded media in regeneration equipment external to the fluid treatment and media management device, and transferring the regenerated non-bonded media back into the fluid treatment and media management device.

25 A fluid treatment and media management device employing a particulate

treatment media, comprising:

a case for housing the non-bonded media;

an inlet formed in said case for admitting an influent into said case;

an outlet formed in said case for exit of an effluent from said case;

5 a media access channel coupled to said non-bonded media, said media access channel adapted for allowing the non-bonded media to be removed from said case without disassembly of the fluid treatment and media management device.